EVALUATION REPORT FOR PERMIT TO CONSTRUCT

Applicant's Name: INSULFOAM LLC Facility ID: 151843

Mailing Address: 6004 N. WESTGATE BLVD., SUITE 120
TACOMA, WA 98406

Equipment Location: 5635 SCHAEFER AVENUE
CHINO, CA 91710

EQUIPMENT DESCRIPTION

Modifications are shown in bold italic, original in bold strike-though.

Appl. No. 510268

Replacement of Polystyrene Foam Pre-Expansion System, No. 2 (G8118) – This application is superseded by Appl. No. 521742

Appl. No. 521742

Change-of-Conditions for Polystyrene Foam Pre-Expansion System (G8118)

Equipment	ID No.	Connected to	RECLAIM Source Type/ Monitoring Unit	Emission and Requirements	Conditions
Process 1: Polystyrene Foam Block Mfg.					P2.1, P13.1, P42.1, ***P42.2***
System 1: Polystyrene Foam Expansion					
HOPPER, NO. 1, POLYSTYRENE BEADS A/N: ~~505541~~ ***521742***	D23	C58		**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
FEEDER, NO. 1, SCREW, POLYSTYRENE BEADS A/N: ~~505541~~ ***521742***	D34	C58		**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
FOAM EXPANSION, NO. 1, PRE-EXPANDER, HIRSCH, MODEL VACUTRANS 1200, WITH FILLING CAN A/N: ~~505541~~ ***521742***	D1	C58			~~**B163.1,**~~ D29.2, D323.1, K67.4
FEEDER, NO. 1, PRE-EXPANDED POLYSTYRENE A/N: ~~505541~~ ***521742***	D25	C58		**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
DRYER, FLUIDIZED BED, NO. 1, A/N: ~~505541~~ ***521742***	D2	C58		**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
CONVEYOR, PNEUMATIC, NO. 1, PRE-EXPANDED POLYSTYRENE A/N: ~~505541~~ ***521742***	D24	C58		**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1

~~HOPPER, NO. 2, POLYSTYRENE BEADS~~ ~~A/N: 505541~~	~~D27~~	~~C58~~		~~PM: (9) [RULE 405, 2-7-1986]~~	~~D29.2, D323.1~~
HOPPER, NO. 2, POLYSTYRENE BEADS A/N: 521742	*D64 (NEW)*	*C58*		*PM: (9) [RULE 405, 2-7-1986]*	*D29.2, D323.1*
~~FEEDER, NO. 2, SCREW, POLYSTYRENE BEAD~~ ~~A/N: 505541~~	~~D26~~	~~C58~~		~~PM: (9) [RULE 405, 2-7-1986]~~	~~D29.2, D323.1~~
FEEDER, NO. 2, SCREW, POLYSTYRENE BEAD A/N: 521742	*D65 (NEW)*	*C58*		*PM: (9) [RULE 405, 2-7-1986]*	*D29.2, D323.1*
~~FOAM EXPANSION, NO. 2, PRE-EXPANDER, HIRSCH, MODEL VACUTRANS 12000, WITH FILLING CAN~~ ~~A/N: 505541~~	~~D3~~	~~C58~~		~~PM: (9) [RULE 405, 2-7-1986]~~	~~B163.1, D29.2, D323.1, K67.4~~
FOAM EXPANSION, NO. 2, PRE-EXPANDER, HIRSCH, MODEL VACUTRANS PREEX 14000, WITH FILLING CAN A/N: 521742	*D66 (NEW)*	*C58*		*PM: (9) [RULE 405, 2-7-1986]*	*D29.2, D323.1, K67.4*
~~FEEDER, NO. 2, PRE-EXPANDED POLYSTYRENE~~ ~~A/N: 505541~~	~~D28~~	~~C58~~		~~PM: (9) [RULE 405, 2-7-1986]~~	~~D29.2, D323.1~~
FEEDER, NO. 2, PRE-EXPANDED POLYSTYRENE A/N: 521742	*D67 (NEW)*	*C58*		*PM: (9) [RULE 405, 2-7-1986]*	*D29.2, D323.1*
~~DRYER, FLUIDIZED BED, NO. 2~~ ~~A/N: 505541~~	~~D4~~	~~C58~~		~~PM: (9) [RULE 405, 2-7-1986]~~	~~D29.2, D323.1~~
DRYER, FLUIDIZED BED, NO. 2 A/N: 521742	*D68 (NEW)*	*C58*		*PM: (9) [RULE 405, 2-7-1986]*	*D29.2, D323.1*
~~CONVEYOR, PNEUMATIC, NO. 2, PRE-EXPANDED POLYSTYRENE~~ ~~A/N: 505541~~	~~D29~~	~~C58~~		~~PM: (9) [RULE 405, 2-7-1986]~~	~~D29.2, D323.1~~
CONVEYOR, PNEUMATIC, NO. 2, PRE-EXPANDED POLYSTYRENE A/N: 521742	*D69 (NEW)*	*C58*		*PM: (9) [RULE 405, 2-7-1986]*	*D29.2, D323.1*
System 2: Pre-expanded Polystyrene Storage					
AGING ROOM, PRE-EXPANDED POLYSTYRENE, 18 STORAGE BAGS, 3,750 CU. FT. EACH WITH BAGFARM HEATING UNIT A/N: ~~505541~~ *521742*	D7	C58		**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1, E193.1, E193.4, ~~E193.6~~
CONVEYOR, PNEUMATIC, VIRGIN PRE-EXPANDED POLYSTYRENE A/N: ~~505541~~ *521742*	D35	C58		**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
System 3: Polystyrene Block Molding					
MIXER, NO. 1, PRE-EXPANDED POLYSTYRENE, PELLET MIXING STATION, WITH 3 BAGS (VIRGIN, REGRIND, AND MOLD FILL), 800 CU. FT. EACH A/N: ~~505541~~ *521742*	D21	C58		**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1

MIXER, NO. 2, PRE-EXPANDED POLYSTYRENE, PELLET MIXING STATION, WITH 3 BAGS (VIRGIN, REGRIND, AND MOLD FILL), 800 CU. FT. EACH A/N: ~~505541~~ *521742*	D52	C58		**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
PRESS, BLOCK MOLDING, IDDROPRESS, MODEL 24, WITH FILL BLOWER, VACUUM EXHAUST, DRAIN VENT, AND PRESSURE EXHAUST A/N: ~~505541~~ *521742*	D56	C58			D29.2
PRESS, BLOCK MOLDING, NUOVA IDDROPRESS, VERTICAL BLOCK MOLD, WITH FILL BLOWER, DRAIN VENT, VACUUM AND PRESSURE EXHAUST A/N: ~~505541~~ *521742*	D63	C58			D29.2
System 4: Polystyrene Foam Block Molding					
CUTTER, WITH ROLLER CONVEYER A/N: ~~505541~~ *521742*	D39			**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
CUTTER, WITH ROLLER CONVEYER A/N: ~~505541~~ *521742*	D41			**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
CUTTER, WITH ROLLER CONVEYER A/N: ~~505541~~ *521742*	D43			**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
CUTTER, WITH ROLLER CONVEYER A/N: ~~505541~~ *521742*	D45			**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
CUTTER, SHAPE A/N: ~~505541~~ *521742*	D47			**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
System 5: Polystyrene Foam Scrap Recovery					
GRINDER, SCRAP A/N: ~~505541~~ *521742*	D11			**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
GRINDER, SCRAP A/N: ~~505541~~ *521742*	D12			**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
SCREEN, CLASSIFYING, SCRAP FOAM A/N: ~~505541~~ *521742*	D57			**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
CONVEYOR A/N: ~~505541~~ *521742*	D62			**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
BULK MATERIAL LOAD/UNLOAD STATION, 6 RECYCLING BAGS, 3,750 CU. FT. EACH, AND 2 SMALLER BAGS A/N: ~~505541~~ *521742*	D13			**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1
CONVEYOR, PNEUMATIC, SCRAP A/N: ~~505541~~ *521742*	D61			**PM: (9) [RULE 405, 2-7-1986]**	D29.2, D323.1

Appl. No. 510269 – Minor Title V Facility Permit Revision
Minor Revision of Title V Facility Permit per Rule 301(l)(7). This application is superseded by A/N: 521743

Appl. No. 521743 – Minor Title V Facility Permit Revision
Minor Revision of Title V Facility Permit per Rule 301(l)(7).

PERMIT CONDITIONS

The following Permit Conditions are changed:

~~**P42.1 The operator shall limit emissions from this process as follows:**~~

~~CONTAMINANT~~	~~Emission Limit (Units)~~
~~VOC~~	~~2.4 lbs per 100 lbs of raw material processed~~

~~**To determine the emissions, it shall be assumed that all blowing agent is released from the product, and a mass balance equation shall be used. The mass balance shall be performed by subtracting the emissions that are captured and controlled by the emission control system (as measured pursuant to Condition D29.2) from the pentane content of the raw beads.**~~

~~**[RULE 1175, 5-13-1994; Rule 1175, 11-5-2010; CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 8-29-2007; RULE CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 7-20-2008]**~~

~~**[Processes subject to this condition: 1]**~~

P42.1 The operator shall limit the raw beads used in this process as follows:

RAW BEAD TYPE	*REQUIREMENT*
Mid Pentane Beads	*less than40% of the annual expanded polystyrene block throughput*
Low Pentane Beads	*greater than or equal to 60% of the annual expanded polystyrene block throughput*

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

[RULE 1175, 5-13-1994; Rule 1175, 11-5-2010]

[Processes subject to this condition: 1]

P42.2 The operator shall collect and reduce the manufacturing emissions from this process as follows:

POLLUTANT	*REQUIREMENT*
VOC	*at least 93% by weight (the product of capture and control device efficiencies)*

To demonstrate compliance with this condition, the operator shall repeat a source test specified in Condition No. D29.2 once every five (5) years.

[RULE 1175, 5-13-1994; Rule 1175, 11-5-2010]

[Processes subject to this condition: 1]

~~B163.1 The operator shall only use raw materials containing the following:~~

~~Raw EPS bead with a pentane content less than or equal to 3.6% by weight.~~

~~Flint Hills Type 54 raw bead that is used to produce either 1.0 pound per cubic foot (pcf) virgin product (1.0 MV), 1.0 pcf recycled product (1.0 MG) or 1.25 pcf recycled product (1.25 MG).~~

~~Loyal Type FS raw bead that is used to produce either 1.0 pcf virgin product (1.0 MV), 1.0 pcf recycled product (1.0 MG) or 1.25 pcf recycled product (1.25 MG).~~

~~BASF Type BFL raw bead (3.9% pentane) that is used to produce either 1.5 pcf recycled product (1.5 MG), 2.0 pcf virgin or recycled product (2.0 MV or 2.0 MG) or 3.0 pcf virgin or recycled product (3.0 MV or 3.0 MG).~~

~~Raw bead with a pentane content greater than 3.6% by weight and not exceeding a maximum of 5.2% by weight, other than the raw bead types referenced above, only for a purpose of conducting a source test to demonstrate compliance with the SIP approved Rule 1175. The operator may only conduct the test upon submission of a test plan and written approval by the District. The operator shall notify the District 10 days prior to the test and submit the report within 30 days after the test.~~

~~At least 60% of the annual EPS block throughput shall be manufactured with low-pentane beads, and the remainder shall be manufactured with mid-pentane beads, which include Flint Hills Type 54, Loyal Type FS, and/or other types of beads used for a compliance source testing purpose.~~

~~The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.~~

~~[RULE 1175, 5-13-1994; Rule 1175, 11-5-2010; CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 8-29-2007; RULE CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 7-20-2008]~~

~~[Devices subject to this condition: D1, D3]~~

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below:

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
VOC	Method(s) specified in District Rule 1175	District-approved averaging time	Protocol to indicate test locations for collection efficiency demonstration
VOC	Method(s) specified in District Rule 1175	District-approved averaging time	Inlet and outlet simultaneously of oxidizer

The test(s) shall be conducted to demonstrate compliance with the minimum of 93% reduction of the overall manufacturing emissions required by Rule 1175(c)(~~4~~ *5*).

The test shall be conducted at least once every five years.

Source test shall be conducted when the polystyrene foam expansion system is operating at maximum capacity.

~~In addition to the source test requirements of Section E of this facility permit, the facility permit holder shall submit the protocol to the AQMD engineer no later than 45 days prior to the proposed test date, and notify the District of the date and time of the test at least 10 days prior to the test.~~

Not withstanding the source test requirements of Section E of this facility permit, the facility permit holder shall submit the protocol to the AQMD engineer at least 365 days prior to the expiration date of this Title V Facility Permit unless otherwise approved in writing by the District, and notify the District of the date and time of the test at least 10 days prior to the test.

~~**The test shall be conducted within 30 days after the receipt of the approval of the protocol.**~~

The test shall be conducted at least 180 days prior to the expiration date of this Title V Facility Permit unless otherwise approved in writing by the District.

Source test shall be conducted in accordance with the equipment configuration and operation specified in the test protocol approved in writing by the District.

The source test shall be conducted when this equipment is operating at parameters (aging times, temperatures and differential pressures) of not less than the minimum operating parameters specified in this permit. If the operating parameters during the source test are greater than the minimum operating parameters specified in this permit, the minimum operating parameters may be increased to reflect the operating parameters during the source test.

The operator shall also provide to the District a source test report containing, at a minimum, the following information:

Required data	Reported As
Collection efficiency of emission collection system	Under actual test condition
Destruction efficiency of oxidizer	Under actual test condition
VOC emissions in ppmV and lbs/hr to support collection efficiency and destruction efficiency results	Under actual test condition
Operating temperature of oxidizer	Under actual test condition
Operating differential pressures of the Silver Tank, the Blue Tank and the Booster Blower	Under actual test condition
Operating temperature of the aging room	Under actual test condition
Bead aging times	***Under actual test condition***
The maximum raw bead blowing agent content processed	Under actual test condition
The residual blowing agent content in product	Under actual test condition

Notwithstanding the requirements of Section E conditions, the source test results shall be submitted to the District no later than 60 days after the source test was conducted.

[RULE 1175, 5-13-1994; Rule 1175, 11-5-2010; **RULE 1303(a)(1)-BACT, 5-10-1996**; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]**

[Devices subject to this condition: D1, D2, ~~D3, D4,~~ D7, D11, D12, D13, D21, D23, D24, D25, ~~D26, D27, D28, D29~~, D34, D35, D39, D41, D43, D45, D47, D52, D56, D57, C58, D61, D62, D63, ***D64, D65, D66, D67, D68, D69***]

D323.1 The operator shall conduct an inspection for visible emissions from all stacks and other emission points of this equipment whenever there is a public complaint of visible emissions, whenever visible emissions are observed, and on an annual basis, at least, unless the equipment did not operate during the entire annual period. The routine annual inspection shall be conducted while the equipment is in operation and during daylight hours.

If any visible emissions (not including condensed water vapor) are detected that last more than three minutes in any one hour, the operator shall verify and certify within 24 hours that the equipment causing the emission and any associated air pollution control equipment are operating normally according to their design and standard procedures and under the same conditions under which compliance was achieved in the past, and either:

1). Take corrective action(s) that eliminates the visible emissions within 24 hours and report the visible emissions as a potential deviation in accordance with the reporting requirements in Section K of this permit; or

2). Have a CARB-certified smoke reader determine compliance with the opacity standard, using EPA Method 9 or the procedures in the CARB manual “Visible Emission Evaluation”, within three business days and report any deviations to AQMD.

The operator shall keep the records in accordance with the recordkeeping requirements in Section K of this permit and the following records:

1). Stack or emission point identification;

2). Description of any corrective actions taken to abate visible emissions;

3). Date and time visible emission was abated; and

4). All visible emission observation records by operator or a certified smoke reader.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-2007]

[Devices subject to this condition: D1, D2, ~~D3, D4,~~ D7, D8, D11, D12, D13, D14, D15, D19, D21, D23, D24, D25, ~~D26, D27, D28, D29~~, D34, D35, D39, D41, D43, D45, D47, D52, D57, D59, D61, D62, ***D64, D65, D66, D67, D68, D69***]

E193.1 The operator shall operate, and maintain this equipment according to the following requirements:

The operator shall maintain the enclosed aging room under a negative pressure of at least 0.007 inches water column at all times that any pre-expander or block molding machine is in operation, or beads are stored in the aging room.

The operator shall operate and maintain a differential pressure monitoring device for the enclosed aging room, which monitors the differential pressure between the inside and the outside of the aging room.

The operator shall also install and maintain a device to continuously record the differential pressure being monitored.

[RULE 1175, 5-13-1994; Rule 1175, 11-5-2010; **RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997**; ~~**CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 8-29-2007; RULE CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 7-20-2008**~~**]**

[Devices subject to this condition: D7]

E193.4 The operator shall operate, and maintain this equipment according to the following requirements:

The enclosed aging room shall be maintained at a 24-hour average temperature of no less than 85 degrees Fahrenheit at all times when there are beads present in the Bead Aging Operation.

~~**The enclosed aging room shall be maintained at a 24-hour average temperature of no less than 90 degrees Fahrenheit at all times when there are Flint Hills Type 54 beads present in the Bead Aging Operation.**~~

~~**The enclosed aging room shall be maintained at a 24-hour average temperature of no less than 92 degrees Fahrenheit at all times when there are Loyal Type FS beads present in the Bead Aging Operation.**~~

The operator shall operate and maintain a temperature measuring and recording system to continuously measure and record the air temperature in the enclosed aging room. Such recorded results shall include, but not be limited to, electronic recordings of the operating temperature for the Bead Aging Operation. The electronic recordings shall clearly indicate the dates and times of each temperature measurement.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

[RULE 1175, 5-13-1994; Rule 1175, 11-5-2010; ***RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997***; ~~**CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 8-29-2007; RULE CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 7-20-2008**~~**]**

[Devices subject to this condition: D7]

E193.5 The operator shall operate, and maintain this equipment according to the following requirements:

The operator shall operate this equipment at a set point temperature of at least 1,570 degrees Fahrenheit whenever the equipment it serves is in operation.

The operator shall operate and maintain a temperature measuring and recording system to continuously measure and record the combustion chamber temperature. Such recorded results shall include, but not be limited to, circular chart recordings containing the oxidizing chamber operating temperature. The circular chart recordings shall clearly indicate the dates and times of continuous temperature recordings, and each individual chart recording shall be for a maximum of seven consecutive calendar days.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

[RULE 1175, 5-13-1994; Rule 1175, 11-5-2010; **RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997**; ~~**CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 8-29-2007; RULE CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 7-20-2008**~~**]**

[Devices subject to this condition: C58]

~~**E193.6 The operator shall operate, and maintain this equipment according to the following requirements:**~~

~~**All Loyal Type FS beads shall be aged for a minimum of 18 hours in this equipment before they are used in the block molding process.**~~

~~**All Flint Hills Type 54 beads shall be aged for a minimum of 24 hours in this equipment before they are used in the block molding process.**~~

~~All BASF Type BFL beads shall be aged for a minimum of 6.4 hours in this equipment whenever they are used to produce 1.5 pcf products.~~

~~All BASF Type BFL beads shall be aged for a minimum of 7.9 hours in this equipment whenever they are used to produce 2.0 pcf products.~~

~~All BASF Type BFL beads shall be aged for a minimum of 9.0 hours in this equipment whenever they are used to produce 3.0 pcf products.~~

~~The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.~~

~~[RULE 1175, 5-13-1994; Rule 1175, 11-5-2010; CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 8-29-2007; RULE CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 7-20-2008]~~

~~[Devices subject to this condition: D7]~~

E193.7 The operator shall operate, and maintain this equipment according to the following requirements:

The operator shall continuously operate fixed magnehelic gauges designated as the Silver Tank magnehelic and the Blue Tank magnehelic during all times that a pre-expander and/or a block mold is in operation.

The operator shall operate and maintain the Silver Tank magnehelic at a minimum negative pressure of 1.0 inches of water (with an allowable variance of +0.5 inches of water).

The operator shall operate and maintain the Blue Tank magnehelic at a minimum negative pressure of 1.0 inches of water (with an allowable variance of +0.5 inches of water).

The operator shall continuously operate a Booster Blower magnehelic gauge during all times that a pre-expander and/or a block mold is in operation and/or when there are beads present in the Bead Aging Operation.

The operator shall operate and maintain the Booster Blower magnehelic at a minimum negative pressure of 1.0 inches of water (with an allowable variance of +0.5 inches of water).

During the times that a magnehelic is required to be operated, the operator shall monitor negative pressure readings of the magnehelic once daily, by manually reading and recording, or by electronically recording, the magnehelic every 10 seconds for a 5 minute period. The 10 second magnehelic readings shall be averaged and the result recorded as a 5 minute average.

The operator shall maintain records of the daily 5 minute average readings for each magnehelic and these recordings shall clearly indicate the date and time of each set of magnehelic readings.

The operator shall determine monthly the accuracy of the magnehelics with an electronic manometer that measures the static pressure at a second port located adjacent to the magnehelic's port. Any magnehelic that shows a static pressure deviation from the electronic manometer of greater than 10% shall be immediately removed and replaced.

Records of all accuracy testing, removal and replacement of magnehelics shall be maintained. The records shall be signed by the person conducting the testing and the person removing or replacing the magnehelics.

[RULE 1175, 5-13-1994; Rule 1175, 11-5-2010; ***RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997***; ~~CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 8-29-2007; RULE CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 7-20-2008~~**]**

[Devices subject to this condition: D7]

K67.4 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Certificate of Analysis showing pentane content for each lot of expandable polystyrene beads processed in this equipment.

~~**Records detailing the brand and type of bead used and the density and source (virgin or recycled/regrind) of each batch of product produced with such bead.**~~

Annual consumption of low-pentane beads and mid-pentane beads (in lbs per year)

Annual production of polystyrene foam blocks (in lbs per year)

[RULE 1175, 5-13-1994; Rule 1175, 11-5-2010; ***RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997***; ~~**CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 8-29-2007; RULE CONSENT DECREE CIVIL NO. 5:07CV01092SGLOP, 7-20-2008**~~**]**

[Devices subject to this condition: D1, ~~**D3,**~~ ***D66***]

BACKGROUND/HISTORY

Insulfoam LLC. (Insulfoam) manufactures polystyrene foam blocks and boards that are used for construction insulation applications. At Insulfoam facility, raw material (Expandable Polystyrene [EPS] beads), is expanded using steam and mechanical agitation, then aged. The expanded and aged material is then molded into a block using steam and vacuum pressure. Insulfoam is the only EPS block molder within the District.

Insulfoam facility type:

RECLAIM		Title V
SOx	NOx	
No	No	Yes

Insulfoam facility was previously known as Premier Industries (facility ID: 25318) and the Title V facility permit was re-issued to Premier Industries on 4/28/2006. A Title V Permit Renewal application (A/N: 515835) was submitted on October 27, 2010, and the proposed renewal permit will be submitted to EPA for review simultaneously with the subject permit revision.

On April 27, 2010, Insulfoam submitted two applications indicated as follows:

Appl. No.	Type	Previous P/O	Equipment	Fee Sch.	Expedited?
510268	P/C-Mod.	G8118	Polystyrene Foam Block Mfg.	Sch. C	No
510269	Plan	N/A	Minor Title V Revision	Title V Rev.	N/A

On November 5, 2010, the Governing Board of the District adopted amendments to Rule 1175 that would allow an alternative compliance option for the EPS block molders. Insulfoam is the only EPS block molder within the District. On April 26, 2011, Insulfoam submitted two additional applications to change

the compliance option from Rule 1175 (c)(2) to Rule 1175 (c)(5). The two applications are indicated as follows:

Appl. No.	Type	Previous P/O	Equipment	Fee Sch.	Expedited?
521742	Change of Cond.	G8118	Polystyrene Foam Block Mfg.	Sch. C	Yes
521743	Plan	N/A	Minor Title V Revision	Title V Rev.	N/A

Application No. 510268 (superseded by A/N: 521742) was submitted to replace one of the two existing Hirsh 12000 pre-expanders with a new Hirsh 14000 pre-expander. The replacement is proposed because one of the two existing Hirsh 12000 pre-expanders has reached the end of its useful lifetime. Although it is a functional replacement of the pre-expander, the application is accepted as alteration to the permitted polystyrene foam block manufacturing process; however, a modification application for the air pollution control (APC) system was not required for the proposed functional replacement.

Insulfoam did not propose an increase of the throughput, no emission increase is expected

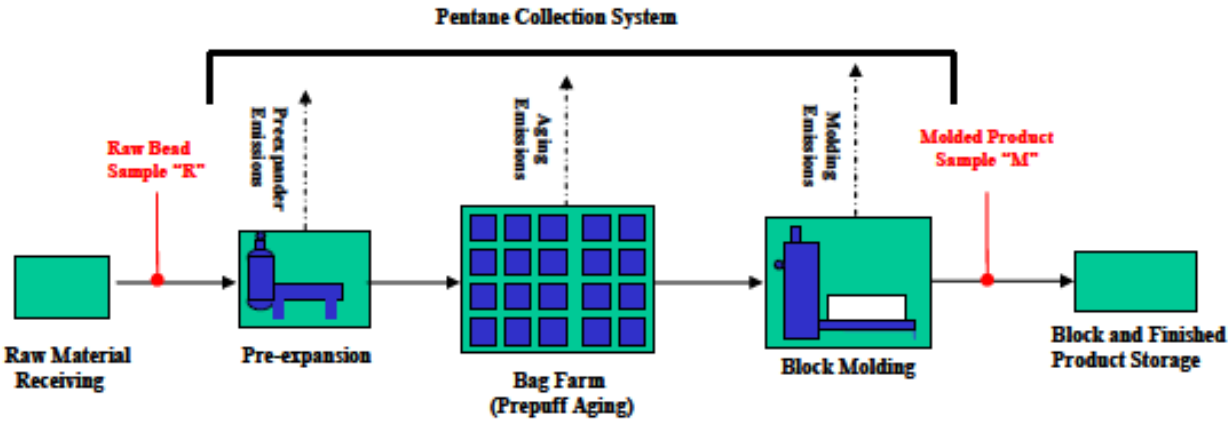
Application No. 510269 was submitted as a plan for the minor revision of the Title V permit as specified in Rule 301.

Application No. 521742 was submitted to change the rule compliance option from Rule 1175 (c)(2) to Rule 1175 (c)(5). In addition, this application requested the citations of the Consent Decree (Civil No. 5:07CV01092SGLOP, 8-29-2007) to be removed because it was terminated on October 9, 2009. Insulfoam did not propose an increase of the throughput, no emission increase is expected

Application No. 521743 was submitted as a plan for the minor revision of the Title V permit as specified in Rule 301.

PROCESS DESCRIPTION

Insulfoam manufactures polystyrene foam blocks and boards that are used for construction insulation applications. In this process, raw material (EPS), is expanded using steam and mechanical agitation, then aged. The expanded and aged material is then molded into a block using steam and vacuum pressure. VOC emissions from these processes are continuously vented to an emission control system consisting of a regenerative thermal oxidizer (RTO) (C58). The EPS block molding process and the pentane collection system are shown in the following process diagram:



1) Raw Material Receiving - The raw materials for the process are EPS resins, called beads, which have a sand-like appearance. The resins are shipped to the facility in lined 1000-pound Gaylord boxes or lined 2200- pound bags. EPS resin is impregnated with a pentane blowing agent. Depending on the amount of pentane contents, the EPS bead is categorized to Low-Pentane Bead or Mid-Pentane Bead. Low-Pentane Bead is defined as the pentane content with an upper limit less than 4.0 percent by weight. Mid-Pentane Bead is defined as the pentane content within the range of 4.0 to 5.2 percent by weight. The pentane content is certified upon delivery by an accompanying bead lot manufacturer's Certificate of Analysis prior to shipment.

2) Pre-Expansion – Pre-expansion is performed in two parallel lines of equipment. Boxes and bags of EPS beads are opened and allowed to air out for 5-10 minutes. Then they are dumped into a hopper (D23, D64). The beads then are augured (D34, D65) into a small hopper (filling can) (D1, D66), where the bead charge is measured then introduced into the Pre-Expander (D1, D66). With steam and mechanical agitation, the beads are pre-expanded into BB-sized particles called "pre-puff". The steam softens the polymer and causes the pentane blowing agent to expand inside the bead and blow outward. Following the pre-expansion cycle, the pre-puff is dumped via a feeder (D25, D67) directly from the pre-Expander into an integral fluidized bed drier (D2, D68), where air is blown through the pre-puff to cool and dry it. Following drying, the pre-puff is blown through a takeaway blower (D24, D69) to the aging bags (D7) for stabilization and aging.

3) Pre-puff Bead Aging – Pre-puff is blown by the take-away blowers (D24, D69) to the aging Room (D7) (also known as "bag farm"), where the pre-puff is aged and stabilized for 4-12 hours. The pre-puff is stored in eighteen 3750-cubic foot bags, located inside of the Aging Room. The aging step allows the temperature to equalize and the pre-puff to achieve the proper conditions for molding. During the pre-puff aging, a portion of the pentane is emitted into the Aging Room.

4) Molding – Stabilized pre-puff is pneumatically conveyed (D35) from the Aging Room to the mixing station (D21, D52) at each of the two block molds (D56, D63). Each mixing station contains three bags: virgin bead bag, regrind bag, and mold fill bag. Specifically, the pre-puff is conveyed to the virgin bead bag. The regrind (recycled scrap bead) from Scrap Recovery (see below), is conveyed to the regrind bag via a pneumatic conveyor (D61).

   When producing virgin foam block, virgin beads are transferred mechanically via auger from the virgin bead bag to the mold fill bag. When producing "scrap foam block", the virgin bead bag and the regrind bag, respectively, to the mixing station, where they are combined then blown to the mold fill bag. From the mold fill bag, the beads are vacuum fed into the block mold (D56, D63) using a mold fill blower.

   Once in the mold, the beads are subjected to a number of steaming and vacuum cycles which fuse the pre-puff into a foam billet or block. The molding cycle consists of the following steps: (1) initial steam/vacuum, with mold cavity evacuated to vacuum system; (2) final steam, with mold cavity pressurized with steam and held, no evacuation or venting; (3) mold pressure exhaust, with exhaust vent opened to instantaneously depressurize mold, the shut; (4) dewatering, when exhaust vents are opened and the mold evacuated via fill blower; (5) final vacuum, with mold evacuated and collected via vacuum system; and (6) open mold/eject block.

5) Cutting and Packaging/Shipping – Some of the foam billets are shipped in the original molded block form. Other blocks are set aside and allowed to stabilize for 24 to 96 hours, then are cut into various product sizes and shapes. The cutters with roller conveyors (D39, D41, D43, D45) cut a block into boards by conveying the block through the hot wire. The Shape Cutter (D47) cuts a block by holding the block stationary and moving the hot wire as directed by a computer. The blocks or cut products may be directly packaged and shipped to the customer, or placed in inventory storage pending shipment.

6) Scrap Recovery – The cutting of foam blocks into boards and shapes generates a significant amount of foam scrap that is not directly saleable. The majority of this scrap is collected, reduced in size, then recycled to the regrind bags at the mold mixing stations (D21, D52) to produce "scrap foam blocks". The facility also receives shipments of scrap from outside sources. These outside sources are primarily Insulfoam's block customers, who purchase the blocks and cut them as necessary at their own facilities. Thereby generating scrap that Insulfoam has agreed to accept.

   The scrap foam is placed into grinders (D11, D12) to reduce the scrap into smaller pieces suitable for on-site recycling. This "regrind" is processed through a screen (D57) to ensure proper sizing, and stored in regrind storage bags (D13).

   In regards of the production of "scrap foam blocks", which are made using a percentage of recycled regrind material, the regrind is pneumatically conveyed (D61)

from the regrind storage bags (D13) to the regrind bag at the mold mixing station (D21, D52). There, the regrind is mixed with "virgin" bead prior to charging to the block mold (D56, D63).

Some scrap generated at Insulfoam is not suitable for recycling, and is packaged and removed from the facility to offsite recyclers or waste landfills.

Source Test

On February 13, 2007, a source test was performed to determine the RTO's VOC destruction removal efficiency (DRE) and the air pollution control (APC) system's collection efficiency (CE). The source test report was prepared by URS Corporation (URS) and submitted to the District on March 27, 2007. The source test report was approved by M&STE on June 7, 2007 (Ref: 05038a). The source test results are indicated as follows:

Parameters	**Result Average**
Collection Efficiency (CE)	99.4%
Destruction Removal Efficiency (DRE)	98.6%
Overall Control Efficiency	98.0%

Proposed Modification

The project is to replace one of the two existing Hirsch 12000 pre-expanders with a Hirsch 14000 pre-expander. The basic design and function of the Hirsch 14000 pre-expander are similar with the existing Hirsch 12000 pre-expander, except that the production capacity of the Hirsch 14000 pre-expander is greater. A summary of the production capacities of the two pre-expanders is listed as follows:

Nominal Density (Lb/ft^3)	Actual Density (Lb/ft^3)	Typical Max Pentane Content	Hirsch 12000 production Capacity (Lb/hr)	Hirsch 14000 production Capacity (Lb/hr)
1.00	0.94	Mid	4,400	5,500
1.25	1.12	Mid	5,300	6,600
1.50	1.26	Low	6,000	7,300

Both the existing Hirsch 12000 pre-expander and the new Hirsch 14000 pre-expander are designed to be sealed to the VOC collection system; thus, the VOC collection efficiency will not change. However, since the new pre-expander will have greater production capacity, more steam will be required by the process and exhausted through the existing filter and condenser. Based on the conversation with Mr. Shawn Osler on March 25, 2011; the existing fan has enough power to pull the addition load. The operation of the fan is limited by Condition E193.7 – minimum pressure drop of one (1) inch of water column. No emission change is expected due to proposed modification.

This facility operates 24 hrs/day, 7 days/wk, and 52 wks/yr. Insulfoam is operating under an emission cap condition (condition no. P2.1), which limits total VOC emissions of 227 lb/day.

EMISSION CALCULATIONS

The new pre-expander has greater production capacity; thus, greater VOC emissions per hour are expected. However, since the facility is operating under an emission cap condition (227 lb/day), no daily emission increase is expected. Thus, no emission calculation required for the proposed pre-expander replacement. The emissions will remained to be the same with the previous permit to operate (P/O: G8118), as indicated as follows:

EMMISSION SUMMARY

	Hourly (lbs/hr)	Daily (lbs/day)	Annually (lbs/yr)	30 day ave. (lbs/day)	30 day NSR (lbs/day)
VOC R1	94.6	2270.4	826,426	2270	2270
VOC R2	9.46	227.0	82,643	227	227

RULES AND REGULATIONS EVALUATION

Rule 212: **Standards for Approving Permits** – The facility is not located within 1,000 feet of a K-12 school, and there is no emission increase with the subject modification. A Public Notice is not required.

Rule 401: **Visible Emissions** – Compliance is expected from well maintained and properly operated equipment.

Rule 402: **Public Nuisance** – With proper operation and maintenance, the equipment is not likely to create a public nuisance.

Rule 1175: **Control of Emissions from the Manufacture of Polymeric Cellular (Foam) Products**

Based on source tests performed, compliance with this rule is expected if all operating permit conditions are met.

(c)(5) – requires the product of capture and control device efficiencies to be at least 93% by weight. The 2007 source test results indicated the combined control efficiency of 98.0% by weight. Compliance is expected.

REG XIII: **New Source Review** - There are no emission increase associated with this change of condition application. No emission offset is required for the subject modification.

Reg XXX: **Title V Permit**
Insulfoam LLC (Facility ID: 151843) has an active Title V permit. Based on the above evaluation, the proposed modification will not result in an increase in emission of any criteria air pollutant or any air toxic contaminant. Therefore, the proposed modification is considered a Minor Permit Revision of Insulfoam's Title V Facility Permit. Application No. 521743 is subject to a 45-day EPA review prior to final revision of the Title V Facility Permit.

CONCLUSION AND RECOMMENDATIONS

Based on this evaluation, it is expected that the subject equipment will be operated in compliance with all applicable District Rules and Regulations. The Permit to Construct is recommended to be issued.